

Name : \_\_\_\_\_

Score : \_\_\_\_\_

## Scientific Notation

Simplify and express in scientific notation:

Example 1

$$(6 \times 10^8) (9 \times 10^4)$$

$$\begin{aligned} (6 \times 10^8) (9 \times 10^4) &= 54 \times 10^8 \times 10^4 \\ &= 54 \times 10^{12} \\ &= \mathbf{5.4 \times 10^{13}} \end{aligned}$$

Example 2

$$\begin{aligned} \frac{15 \times 10^8}{12 \times 10^{-2}} &= \frac{15}{12} \times 10^8 \times 10^2 \\ &= \mathbf{1.25 \times 10^{10}} \end{aligned}$$

Simplify each problem and express the answer in scientific notation.

1)  $(6 \times 10^{-5}) (8 \times 10^{-9})$

Answer : \_\_\_\_\_

2)  $\frac{17 \times 10^3}{8 \times 10^7}$

Answer : \_\_\_\_\_

3)  $\frac{15 \times 10^{-6}}{4 \times 10^4}$

Answer : \_\_\_\_\_

4)  $(3 \times 10^{-2}) (6 \times 10^{-7})$

Answer : \_\_\_\_\_

5)  $(5 \times 10^3) (15 \times 10^{-9})$

Answer : \_\_\_\_\_

6)  $\frac{28 \times 10^9}{5 \times 10^5}$

Answer : \_\_\_\_\_

7)  $(7 \times 10^6) (12 \times 10^2)$

Answer : \_\_\_\_\_

8)  $\frac{15 \times 10^5}{6 \times 10}$

Answer : \_\_\_\_\_

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**Answer key**

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Example 2

$$\begin{aligned} \frac{15 \times 10^8}{12 \times 10^{-2}} &= \frac{15}{12} \times 10^8 \times 10^2 \\ &= \mathbf{1.25 \times 10^{10}} \end{aligned}$$

Simplify each problem and express the answer in scientific notation.

1)  $(6 \times 10^{-5}) (8 \times 10^{-9})$

Answer :  $\mathbf{4.8 \times 10^{-13}}$

2)  $\frac{17 \times 10^3}{8 \times 10^7}$

Answer :  $\mathbf{2.125 \times 10^{-4}}$

3)  $\frac{15 \times 10^{-6}}{4 \times 10^4}$

Answer :  $\mathbf{3.75 \times 10^{-10}}$

4)  $(3 \times 10^{-2}) (6 \times 10^{-7})$

Answer :  $\mathbf{1.8 \times 10^{-8}}$

5)  $(5 \times 10^3) (15 \times 10^{-9})$

Answer :  $\mathbf{7.5 \times 10^{-5}}$

6)  $\frac{28 \times 10^9}{5 \times 10^5}$

Answer :  $\mathbf{5.6 \times 10^5}$

7)  $(7 \times 10^6) (12 \times 10^2)$

Answer :  $\mathbf{8.4 \times 10^9}$

8)  $\frac{15 \times 10^5}{6 \times 10}$

Answer :  $\mathbf{2.5 \times 10^4}$